The Cleveland Prototype Housing designs will demonstrate sustainable building practices by integrating a number of strategies into one very sensible design solution: using recycled, low-polluting materials and controlled ventilation equipment to preserve natural resources and support environmentally progressive industries. By efficiently using inner city land, this development will help revitalize downtown areas while reducing traffic, pollution and energy use from commuting.

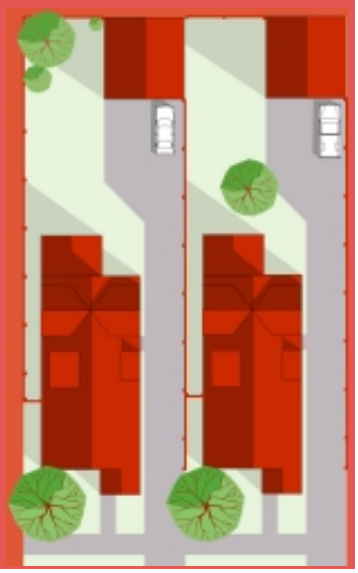
The prototype houses use a systems approach to advanced housing design to meet the following goals: **increase affordability**, **improve health and safety**, improve comfort and increase durability and resource efficiency. These homes will reduce the health risks from fossil fuel combustion by using power vented combustion appliances. Air tight construction techniques allow for ventilation in its most energy efficient manner. The **benefits** also include local jobs, less environmental impact and reduced energy consumption.

Cleveland Prototype Housing

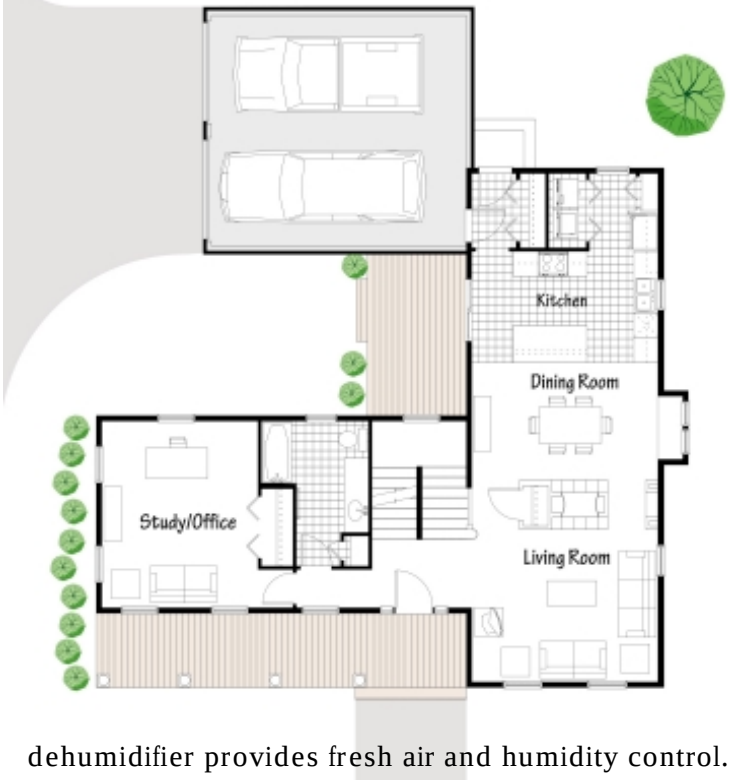
Building Science Corporation with
Betsy Pettit Architects
Cleveland, Ohio 1999
2247 sq. ft. four bedroom plus loft, 2 1/2 bath

Specifications

- R-30 blown cellulose attic insulation
- R-23 walls with 6" fiberglass batts, 1" EPS sheathing and advanced framing
- Advanced framing (2 x 6 @ 24" o.c.) creates less thermal bridging, more room for insulation, more efficient use of lumber, and less construction waste
- Unvented crawlspace with R-10 perimeter insulation provides permanent access for any future mechanical upgrades or repairs and, as a conditioned space, provides ample storage possibilities
- Air retarder system
- Water saving plumbing fixtures
- Compact fluorescent lighting
- Low-E insulating glass with thermal break
- Combination heating and hot water system
- Controlled ventilation for air quality and humidity control
- Non-VOC emitting paint
- Job-site recycling
- The use of universal design features makes the living space on the first floor more fully accessible for anyone with a disability



Pettit/Gates Design Build uses a systems approach to advanced housing design to meet the following goals: reduce cost and increase affordability, improve health and safety, improve comfort and increase durability and resource efficiency. Design optimization was achieved using system engineering techniques. A cost trade-off method was used to improve the building envelope and downsize the mechanical systems. Moisture and odor pollutants from the bathroom and the kitchen are removed with switch operated exhaust fans. An energy-efficiency ventilating dehumidifier provides fresh air and humidity control.



The house achieved a **43% reduction** in energy use for heating, cooling, ventilation and hot water over typical homes of the same square footage that meet the Ohio 1995 Model Energy Code.

System improvements include an advanced framing system, advanced air leakage control system, enhanced thermal insulation system, innovative duct distribution system, integrated mechanical systems, and fresh air change continuously at the rate recommended by ASHRAE 62-89 standards (15 cfm per bedroom, 30 cfm for the master bedroom).

Green Pastures House Plan

Building Science Corporation with
Betsy Pettit Architects
Marysville, Ohio 1999

3,470 sq. ft. three bedroom, 3 1/2 bath with optional fourth bedroom/home office suite and finished basement family room

Specifications

- R-26 wall insulation
- R-38 ceiling/roof insulation
- R-10 full coverage insulation on basement walls and under basement floor slab
- Energy efficient heating and hot water systems
- Energy-efficient ventilating dehumidifier for air change and humidity control
- Exhaust fans in every bathroom and over the range to promote pollutant removal

The Meeder Residence uses a systems approach to advanced housing design to meet the following goals: reduce cost and increase affordability, improve health and safety, improve comfort and increase durability and resource efficiency. Design optimization was achieved using system engineering techniques. No additional construction costs were incurred due to the use of a cost trade-off method to improve the building envelope and downsize the mechanical systems. The house is airtight so it allows only the infiltration necessary to provide for the 60 cfm airchange. No energy penalty will be paid for the provision of fresh air. A slight positive pressure (3 Pascal maximum) controls pollutant entry (radon, soil gas, etc.) into the house by exclusion. Moisture and odor pollutants from the bathroom and the kitchen are removed with switch operated exhaust fans.

The house achieved a **46% reduction** in energy use for heating, cooling, ventilation and hot water over typical homes of the same square footage that meet the 1995 Model Energy Code for Ohio.

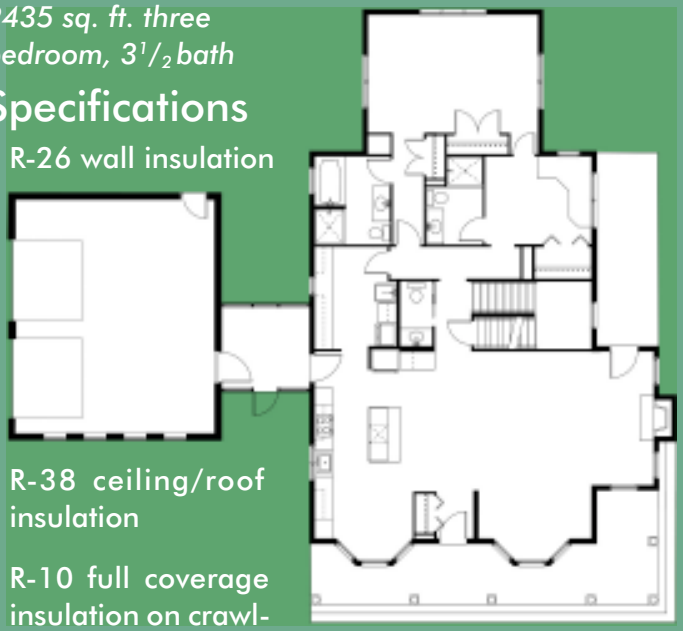
Overall system improvements include and advanced framing system, advanced interior and exterior air leakage control system, enhanced thermal insulation system, innovative duct distribution system, integrated mechanical systems, fresh air supplied continuously at the rate recommended by ASHRAE 62-89 standards (15 cfm per bedroom, 30 cfm for the master bedroom).

A 34-gallon, 94% efficient "Polaris" hot water heater is combined with a $2^1/_2$ ton First Company air handler provides heat and hot water. This combination provides the same or better heating and hot water capabilities than a 100,000 BTU furnace and 50 gallon hot water tank at approximately 46% of the fuel costs and the same first time cost to the homeowner.

Meeder Residence

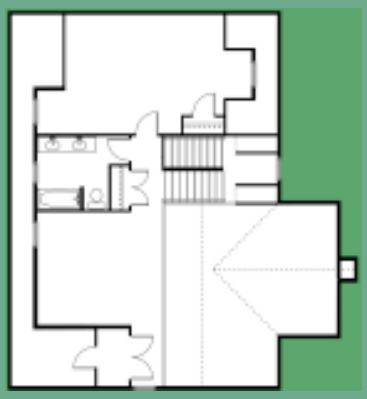
Building Science Corporation with
Betsy Pettit Architects
Ostrander, Ohio 1999

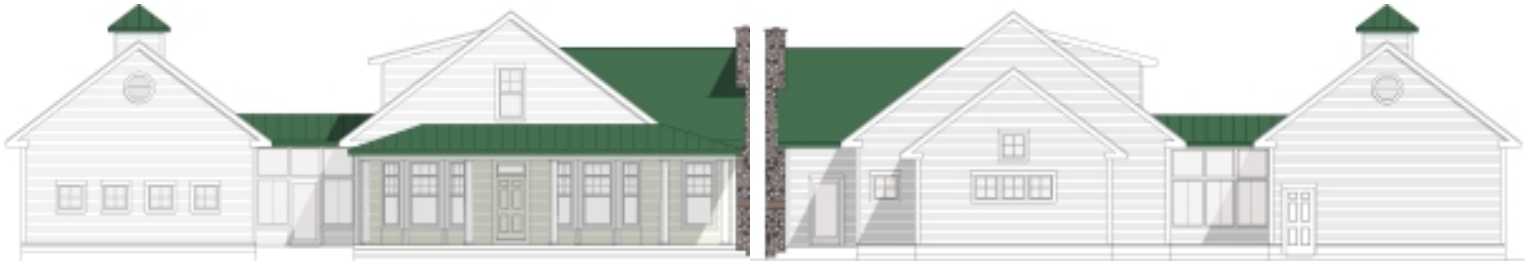
2435 sq. ft. three bedroom, $3^1/_2$ bath



Specifications

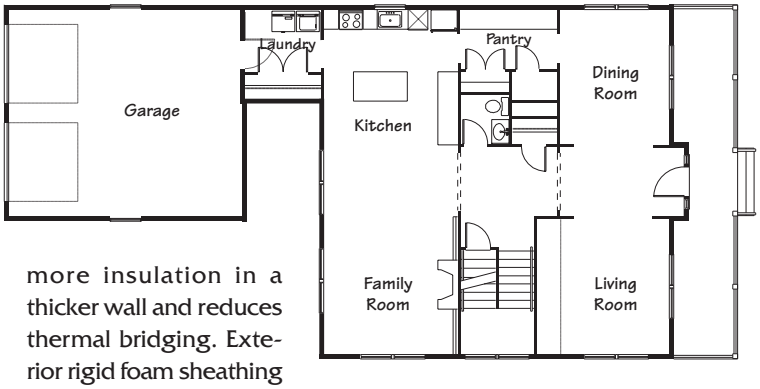
- R-26 wall insulation
- R-38 ceiling/roof insulation
- R-10 full coverage insulation on crawl-space walls with continuous ground cover
- Insulating sheathing as an exterior air retarder system, interior drywall as an interior air retarder system (ADA)
- Predicted Design Heating Load at 0°F design temperature is 34,000 BTU's
- 46% BTU reduction compared to a MEC 95 house (this means a 46% reduction in fuel usage)

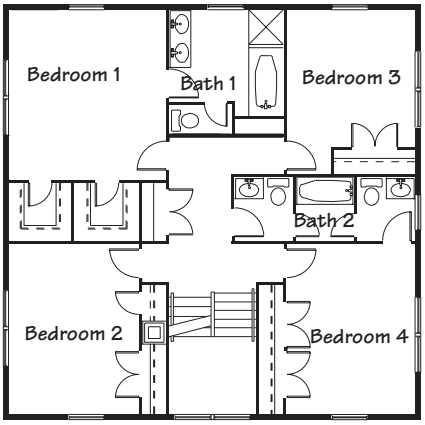




Every home built by Prairie Holdings Corporation has a controlled ventilation system that enhances indoor air quality and comfort by bringing in outside air when needed by the occupants. Typical homes have no way of providing outdoor air in a controlled manner aside from relying on the construction of leaky homes and the whims of the weather (wind and temperature differences). Leaky homes consume energy and tend to be uncomfortable from drafts. Tight homes without controlled ventilation can also have problems due to a build up of odors and other pollutants. The optimum approach for healthy, safe, comfortable, energy efficient homes is to construct a tight building envelope and provide controlled mechanical ventilation.

Building Envelope An advanced framing system using 2x6s on 24-inch centers, single top plates and stacked framing allow for more insulation in a thicker wall and reduces thermal bridging. Exterior rigid foam sheathing with taped joints acts an exterior air barrier as well as a drainage plane eliminating the need for building paper or housewrap.



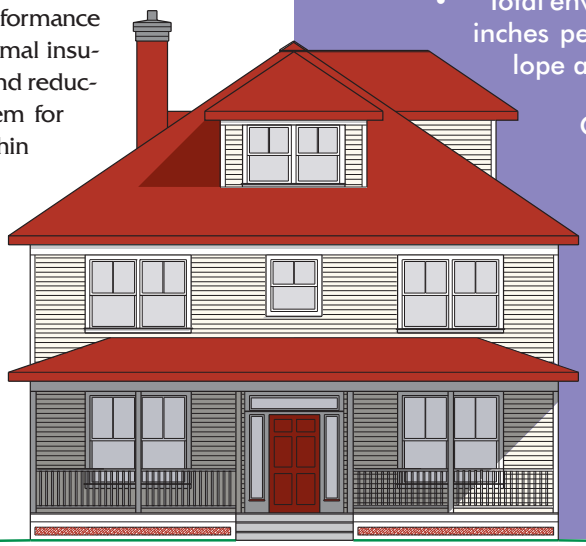


Windows Low-emissivity, argon-filled windows increase the insulating value over standard windows.

Mechanical Systems A sealed combustion condensing gas furnace is completely isolated from the inside air. Combustion air is drawn from the outside with a minimal chance of combustion products spilling into the conditioned space. The water heater is a power vented model. A programmable setback thermostat with a timer is installed which reduces the energy demand.

The tighter building envelope, the high-performance windows and the increased levels of thermal insulation allow a considerable simplification and reduction in size of the duct distribution system for heating and cooling. Moving the ducts within the conditioned space eliminates duct leakage to the exterior as well as limits the temperature difference at the ducts. These improvements result in reduced heating and cooling loads which allow the air conditioning unit to be downsized as well.

Controlled mechanical ventilation is provided by a fresh air supply-only system with an AirCylcer™ for mixing.



Prairie Crossing Four Square

Praire Holdings Corporation
Grayslake, Illinois
1999

2,650 sq. ft. four bedroom, 2 1/2 bath house with an optional fireplace and fully insulated basement and attic living space with optional bath and dormers

Specifications

The mechanical system improvements include:

- Single, sealed combustion furnace located in the building envelope (basement)
- All ductwork located within the building envelope
- Independent supply ventilation system
- Power vented gas water heater

Building envelope improvements include:

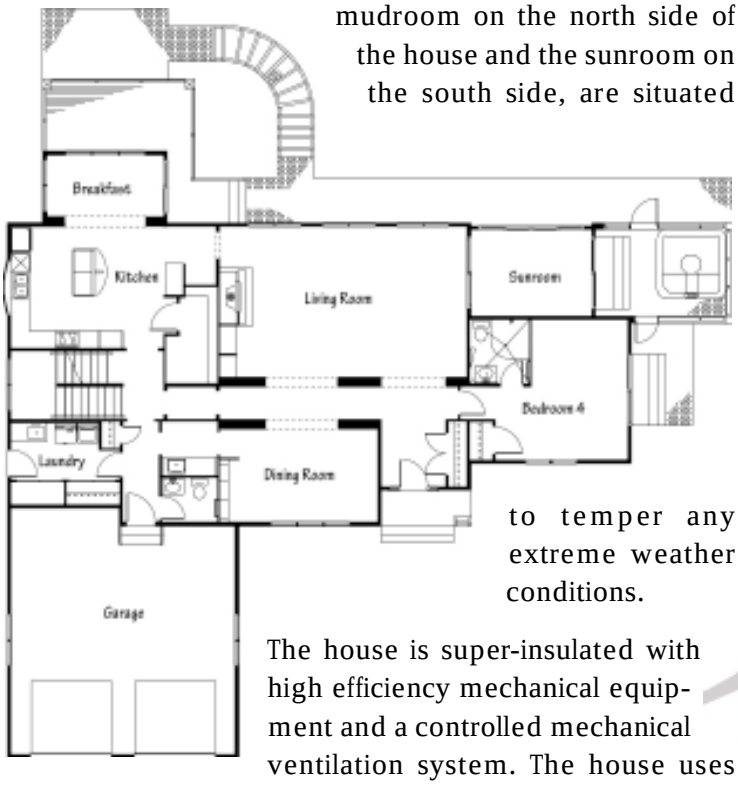
- Basement has R-10 full height fiberglass batt insulation
- Walls use the advanced framing system with R-19 batts, R-7 insulating sheathing and an interior air flow retarder
- Roof truss with R-38 blown and batt attic insulation with vented assembly
- Windows are low-E, argon filled units
- Total envelope leakage is less than 2.5 square inches per 100 square feet of building envelope area at 10 Pascals

Overall system improvements include:

- Controlled supply ventilation system
- Exterior air flow retarder system (sheathing taped)
- Interior air flow retarder system (glued gypsum board)
- High performance glazing
- All ductwork placed in the conditioned space

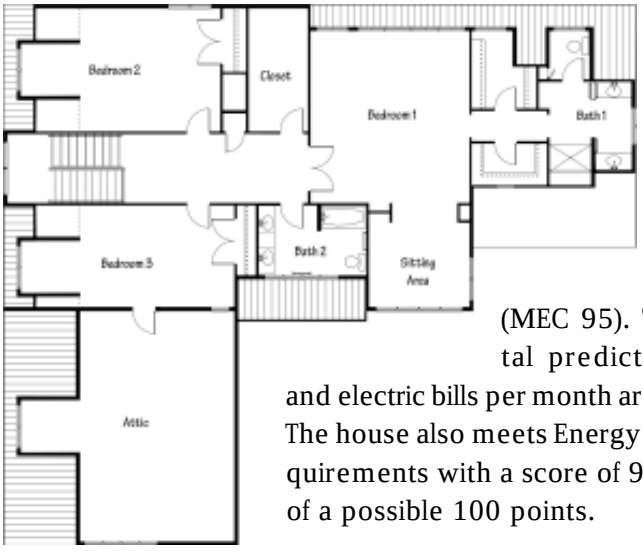
Designing the Snyder House to take advantage of the natural beauty of the site fulfilled the dreams of the new homeowners. The rear of the house is oriented to the south with large windows to optimize the passive solar gain in winter and includes overhangs and deciduous trees to protect the house from overheating in the summer.

The second floor of the house is tucked into the 12/12 roof allowing the enclosed space to be used in an economic manner. Private outdoor space is located to the rear of the house for the southern exposure. A ground floor bedroom and full handicapped accessible bathroom provide for current and future living flexibility. Buffer spaces, such as the vestibule and mudroom on the north side of the house and the sunroom on the south side, are situated



to temper any extreme weather conditions.

The house is super-insulated with high efficiency mechanical equipment and a controlled mechanical ventilation system. The house uses 50% less energy for heating and cooling than a similar house that meets the current Massachusetts building code



(MEC 95). The total predicted gas and electric bills per month are $151. The house also meets Energy Star requirements with a score of 90.2 out of a possible 100 points.

Snyder Residence

Westford, Massachusetts
1999

4,000 sq. ft. five bedroom, 3 1/2 bath, two car garage house with fully insulated basement

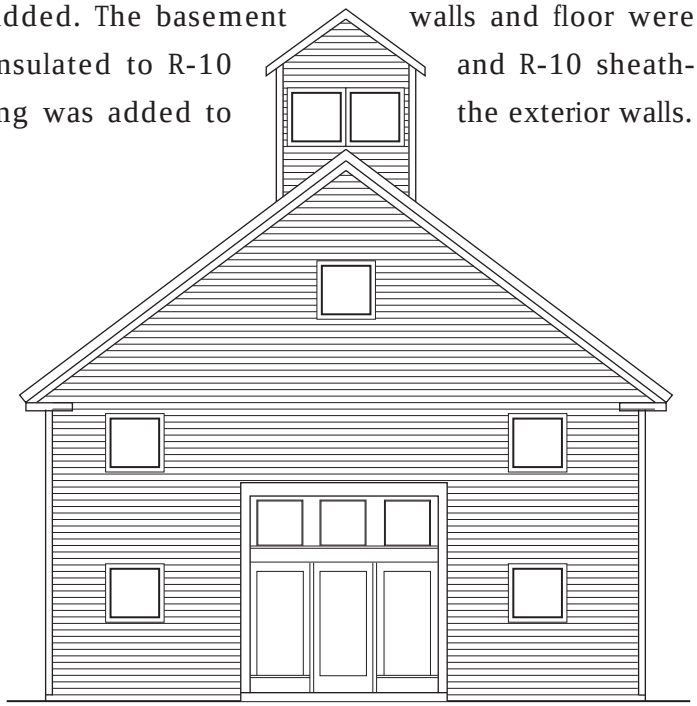
$102/sq. ft. construction cost

Specifications

- 2 X 6 exterior walls
- R-38 ceiling/attic insulation
- R-30 cathedral ceiling insulation with R-5 XPS sheathing
- R-19 fiberglass wall insulation with R-8 rigid foam sheathing
- Full basement with R-10 walls and floor
- Low-E high performance windows
- High efficiency combo system with ECM motor and fan-coil provides heat and hot water
- Window are sized and positioned to decrease heat loss during winter and decrease heat gain in summer while providing daylighting year-round and passive solar gain in winter
- 12 SEER air conditioner
- Continuous filtered supply ventilation with intermittent exhaust ventilation

The house and barn in Westford were redesigned and constructed to demonstrate the ability to reuse sensitive historic structures for modern uses through advanced technologies which provide for energy efficiency, durability, good indoor air quality, reduce costs, and improve comfort.

The 1850's house interior was redesigned to allow for a modern kitchen and small rooms were opened to each other. The attic was insulated to R-38 and converted into a finished space with two additional bedrooms and a full bath. Mechanical ventilation was also added. The basement walls and floor were insulated to R-10 and R-10 sheathing was added to the exterior walls.



The barn was redesigned to retain its **original character** as a barn while providing comfort and power for a modern office setting. The interior is the original board sheathing.

The exterior is covered with 8-inches of rigid EPS insulation on the walls and 10-inches on the roof. As in the basement, the crawlspace walls and floors were insulated to R-10. A **high efficiency combo system** provides heat and hot water and a controlled supply mechanical ventilation system provides for good indoor air quality.

The house and barn renovation exceed **Energy Star** requirements, receiving a score of 91.3 out of 100 points.

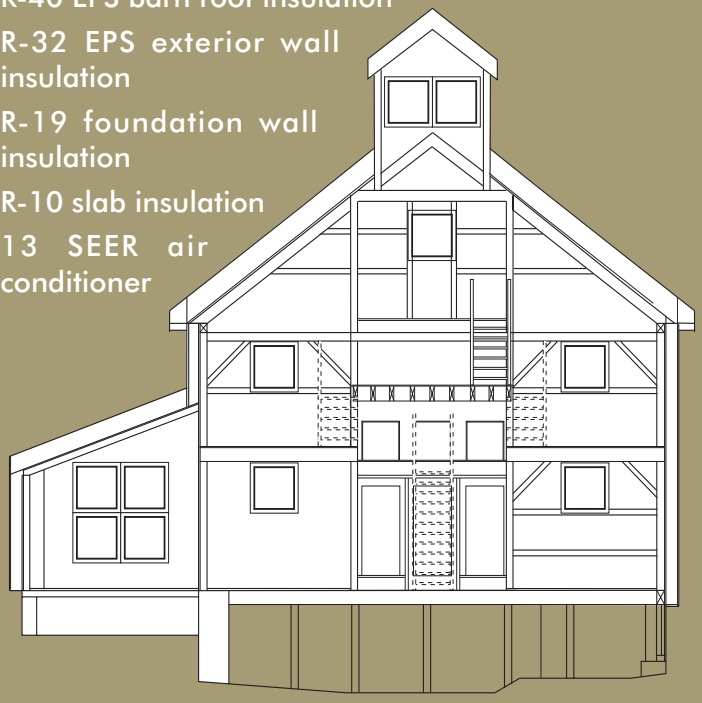
House and Barn Renovation

Westford, Massachusetts
1998

House renovation and barn-to-office conversion

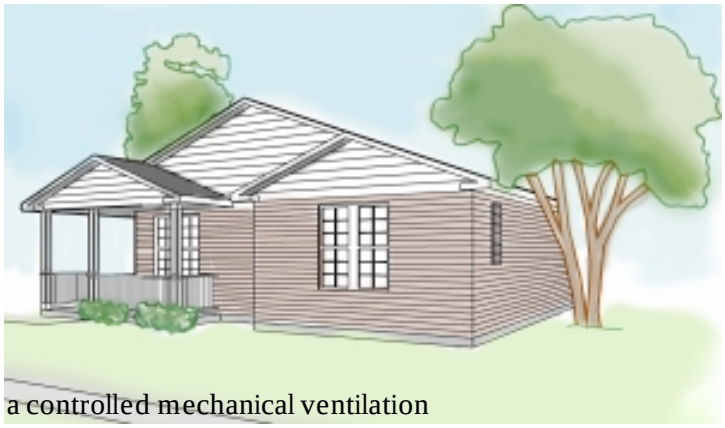
Specifications

- R-40 EPS barn roof insulation
- R-32 EPS exterior wall insulation
- R-19 foundation wall insulation
- R-10 slab insulation
- 13 SEER air conditioner



- High performance low-E windows
- High efficiency combination heat and hot water system
- Controlled supply mechanical ventilation

The Mississippi Energy Demonstration Project involves upgrading materials or equipment that increase the energy efficiency of the homes. These homes showed there are break points where the cost of energy-efficient features are balanced by the reductions of other construction costs. These break points involve levels of energy efficiency that allow specific components of a building to be downsized or deleted. Construction costs are reduced by changes and improvements to the building envelope. Improved building envelope performance allows the mechanical equipment to be downsized accordingly. The initial construction savings offset the increased costs associated with the addition of



a controlled mechanical ventilation system and source control of pollutants.

The construction cost savings occur by applying energy conservation technology (building envelope, mechanical systems, lighting, appliances) which pays for the increased costs associated with healthy housing and resource efficiency.

Systems approaches are the key elements used in integrating and optimizing the home-building systems to create these break points. Optimal value engineering uses 2x6s on 24-inch centers instead of 2x4s on 16-inch centers. This results in a thicker wall with 40% more insulation, reduces the amount of framing lumber by 30% which in turn reduces the time it takes to build the frame all for less money than standard construction practices. Thicker walls and tighter construction enabled us to reduce the size of the air distribution system. Since the exterior wall system was improved, fewer, smaller ducts no longer have to run out to the windows or exterior walls.

The systems approach also focused on reducing a builder's number one headache: warranty and callback expenses. Strategies were developed to reduce drywall cracking (using drywall clips results in floating corners and less drywall cracking), nail pops, paint and trim problems, dust marking of carpets and comfort complaints.

Mississippi Energy Demonstration Project

Rosedale, Mississippi
1998

1320 sq. ft. three bedrooms, 2 bath

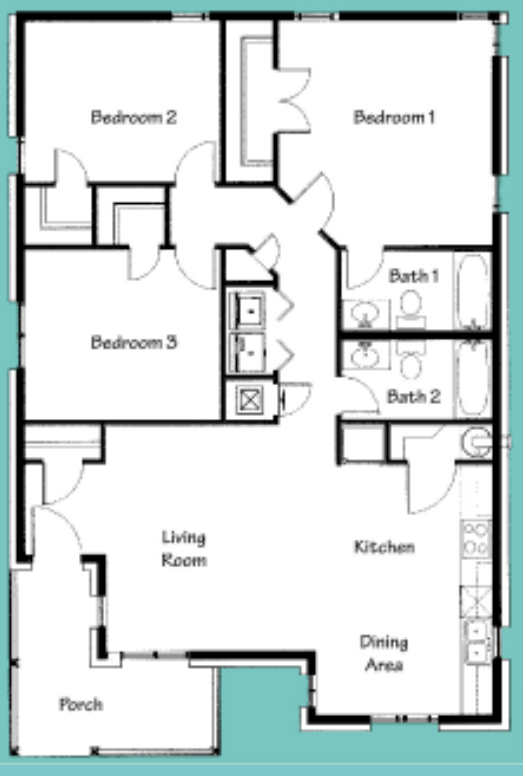
Specifications

These houses use a systems approach to advanced housing design to meet the following goals:

- Reduce cost and increase affordability
- Improve health and safety
- Improve comfort
- Increase durability and resource efficiency

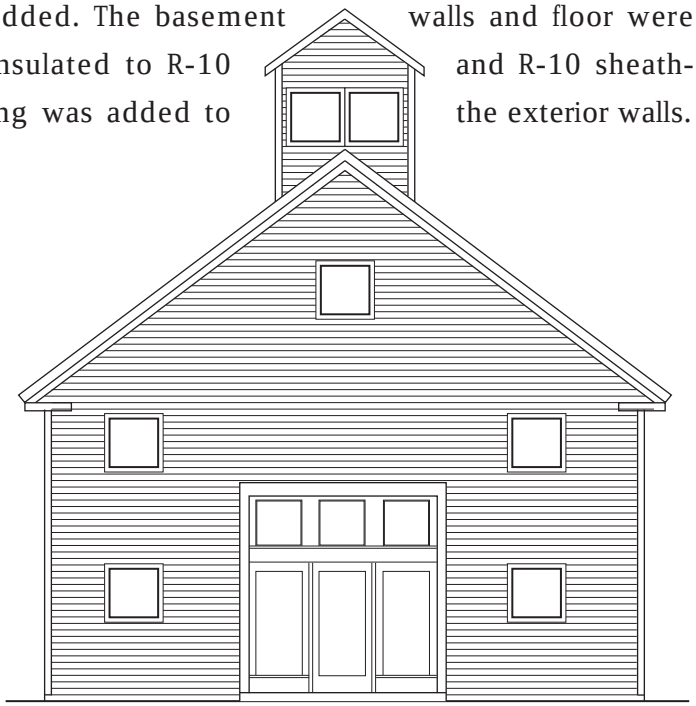
Overall improvements include:

- Optimal value engineering
- Exterior rigid insulation is sealed to exterior of wall framing at top plates, bottom plates and around openings
- Cross bracing
- Insulated foundations
- Extra attic insulation
- A water managed wall system (drainage plane with a pressure equalized drainage space)



The house and barn in Westford were redesigned and constructed to demonstrate the ability to reuse sensitive historic structures for modern uses through advanced technologies which provide for energy efficiency, durability, good indoor air quality, reduce costs, and improve comfort.

The 1850's house interior was redesigned to allow for a modern kitchen and small rooms were opened to each other. The attic was insulated to R-38 and converted into a finished space with two additional bedrooms and a full bath. Mechanical ventilation was also added. The basement walls and floor were insulated to R-10 and R-10 sheathing was added to the exterior walls.



The barn was redesigned to retain its **original character** as a barn while providing comfort and power for a modern office setting. The interior is the original board sheathing.

The exterior is covered with 8-inches of rigid EPS insulation on the walls and 10-inches on the roof. As in the basement, the crawlspace walls and floors were insulated to R-10. A **high efficiency combo system** provides heat and hot water and a controlled supply mechanical ventilation system provides for good indoor air quality.

The house and barn renovation exceed **Energy Star** requirements, receiving a score of 91.3 out of 100 points.

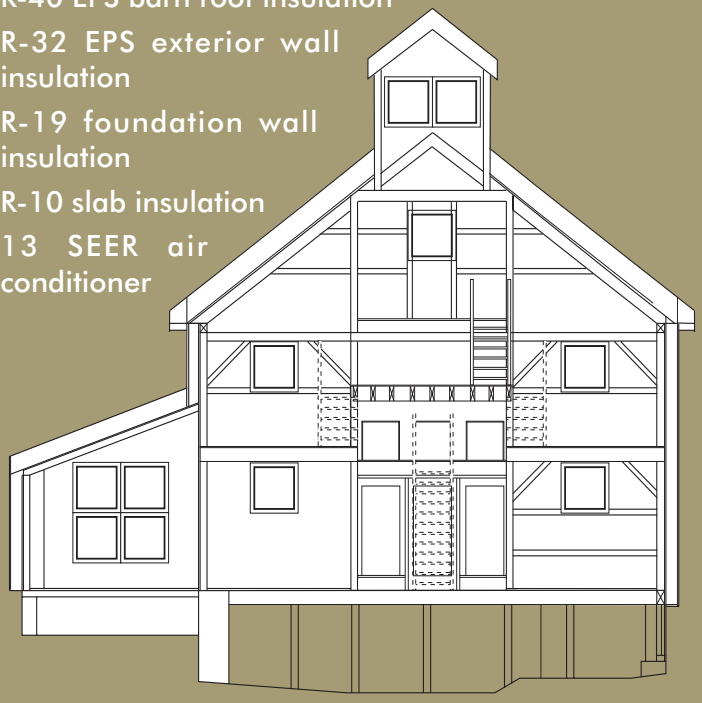
House and Barn Renovation

Westford, Massachusetts
1998

House renovation and barn-to-office conversion

Specifications

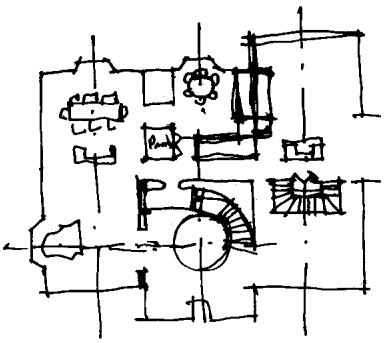
- R-40 EPS barn roof insulation
- R-32 EPS exterior wall insulation
- R-19 foundation wall insulation
- R-10 slab insulation
- 13 SEER air conditioner



- High performance low-E windows
- High efficiency combination heat and hot water system
- Controlled supply mechanical ventilation

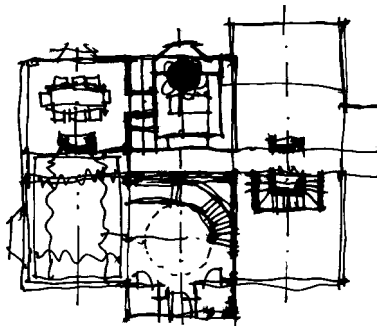
Good building design and practice involves more than using good materials and good workmanship. More than anything else, it involves a degree of thoughtfulness beyond what most of us are used to — a focus on how elements of the building interact now and in the future.

Houses should be durable and capable of being maintained. The single most important factor affecting durability is deterioration of materials by moisture. Houses should be protected from getting wet during construction and operation and be designed to dry should they get wet.



In the O'Leary Wei Residence Building Science Corporation met with the client to develop shared goals:

- promote a healthy, safe indoor environment with **good indoor air quality** (by reducing source strength of pollutants as well as providing controlled ventilation)



- promote energy efficiency and BTU use reduction within the house (and specifically create a design that uses less than 65% of the average BTU usage for a home its size)
- promote **resource efficiency** and environmental awareness using the concepts of reduce, reuse, and recycle
- achieve the above within the economic reach of the O'Leary Wei's
- achieve the above by creating a traditional neighborhood house which is sustainable due to its desirability

O'Leary Wei Residence

Harvard, Massachusetts
1996

5,000 sq. ft. five bedroom, four bath, three car garage house with fully insulated basement and fully insulated attic

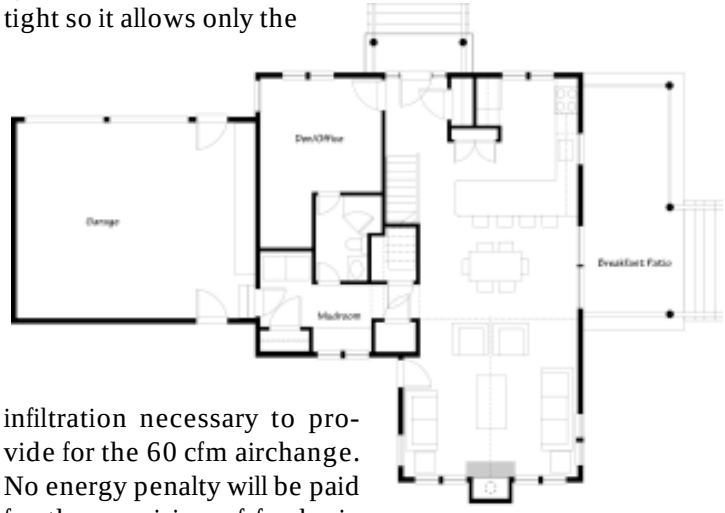
$90/sq. ft. construction cost

Specifications

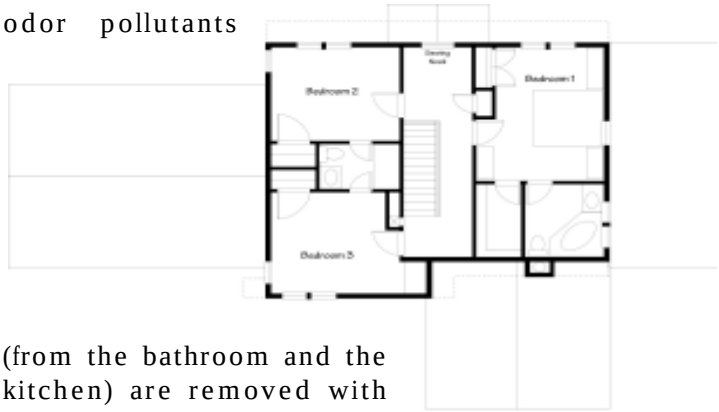
- R-28 wall insulation
- R-38 roof insulation
- R-19 basement wall insulation
- R-10 sub slab insulation
- All ductwork located between floors in open web floor truss system
- Heating, ventilation and cooling provided by a closed loop ground source heat pump
- House exceeds Energy Crafted Homes Standards with less than 1 square inch of leakage are per 100 square inches of surface area
- An energy efficient continuous supply ventilation system provides fresh air with point source exhaust ventilation on demand in baths and kitchen

The Gates Residence achieved a 50% reduction in energy use (for heating, cooling, ventilation and hot water) over typical homes of the same square footage in the area.

Design optimization was achieved using system engineering techniques. **No additional construction costs** were incurred due to the use of a cost trade-off method to improve the building envelope and downsize the mechanical systems. The house is air-tight so it allows only the



infiltration necessary to provide for the 60 cfm airchange. No energy penalty will be paid for the provision of fresh air. A slight positive pressure (max. 3 Pascals) controls pollutant entry (radon, soil gas, etc.) into your house by exclusion. Moisture and odor pollutants



(from the bathroom and the kitchen) are removed with switch operated exhaust fans.

Overall system improvements include:

- advanced framing system
- advanced interior and exterior air leakage control system
- enhanced thermal insulation system
- innovative duct distribution system
- integrated mechanical systems
- fresh air supplied continuously at the rate recommended by ASHRAE 62-89 standards (15 cfm/bedroom, 30 cfm/master bedroom—total 60 cfm)

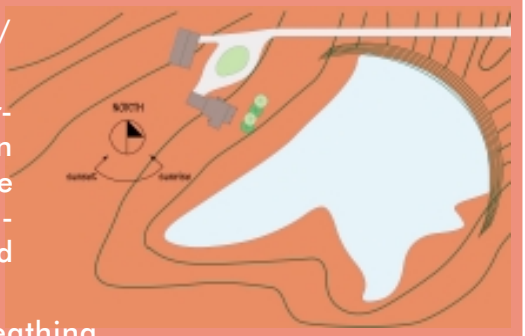
Gates Residence

Building Science Corporation with
Betsy Pettit Architects
Ostrander, Ohio 1995

1900 sq. ft. three bedrooms, three bath
$52/sq. ft. construction cost

Specifications

- R-28 wall insulation
- R-50 ceiling/roof insulation
- R-28 full coverage insulation on crawlspace walls with continuous ground cover

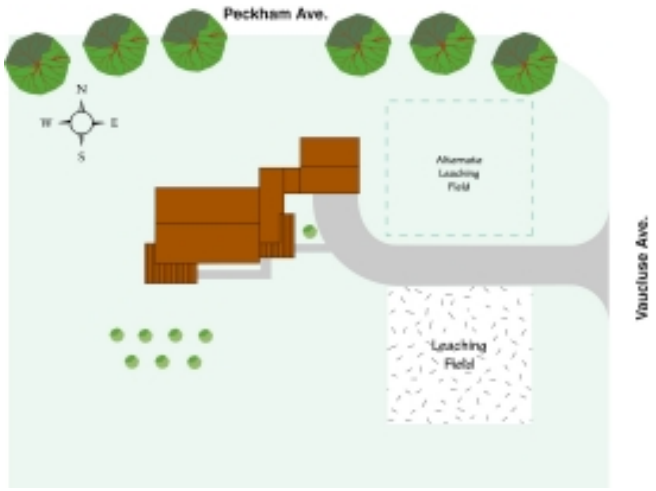


- Insulating sheathing as an exterior air retarder system, interior drywall as an interior air retarder system (ADA)
- Predicted BTU usage/hr with 0° design temperature is 27,000 BTU's (a typical 1900 sq. ft. house is 57,000 BTU's)
- 52% BTU reduction compared to a conventional house (this means a 52% reduction in fuel usage)
- A 34 gallon "Polaris" (100,000 BTU's in/94,000 BTU's out; 94% efficient; 10 year warranty) hot water heater combined with a 1½ ton "First Company" air handling unit provides heat and hot water. This combination provides the same or better heating and hot water capabilities of a 100,000 BTU furnace combined with a 50 gallon hot water tank at approximately 50% of the fuel costs and the same first time cost to the homeowner.

A house is more than nails, framing, siding and drywall. It is an interrelated system of which people, the building and the environment — both local and global — are an integral part. As home builders, designers and contractors, we are engaged in trades that have a tremendous impact on the well-being of people, buildings and the environment.

The Robertson Residence was designed to provide access to the sun's energy for heating periods while excluding its energy during cooling periods. Windows on the south will be effectively shaded, reducing the heat gain from mid-morning to mid-afternoon in the summer by approximately 50% while allowing for maximum passive solar gain during these hours in the winter. The front foyer/sunroom are thermally isolated from the house (the walls and floor between the sunroom and the house are insulated and air sealed). This will allow for this room to be closed off from the house **reducing heat gain** (approximately 5000 BTU's) in the summer, while also allowing for reduced heat loss through these windows during non-sunny winter days. It includes a high thermal mass wood burning fireplace that has the ability to efficiently heat the house. The house was designed and built with advanced framing techniques, advanced leak-free construction and enhanced thermal insulation levels. Because of the above, the house requires no mechanical heating system most of the year. However, a heating system was provided should there be long, overcast periods and/or the homeowners do not wish use the fireplace.

Finally, the house has fresh air supplied continuously at the rate recommended by ASHRAE 62-89 standards (15 cfm/bedroom, 30 cfm/master bedroom—60 cfm total). By making the house **airtight**, we will be able to allow only the infiltration necessary to provide for the 60 cfm airchange, so that no energy penalty will be paid for the provision of fresh air. In addition, by providing a slight positive pressure (max. 3 Pascals), we will be controlling pollutant entry (radon, soil gas, etc.) into the house by exclusion. Moisture and odor pollutants (from the bathroom and the kitchen) will be removed with on demand exhaust fans.



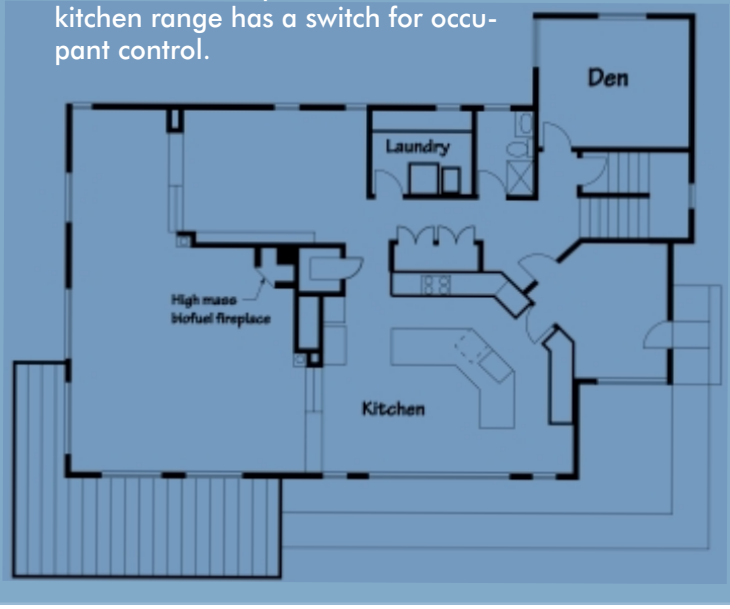
Robertson Residence

Middletown, Rhode Island
1995

3000 sq. ft. four bedrooms, three full baths
$75/sq. ft. construction cost

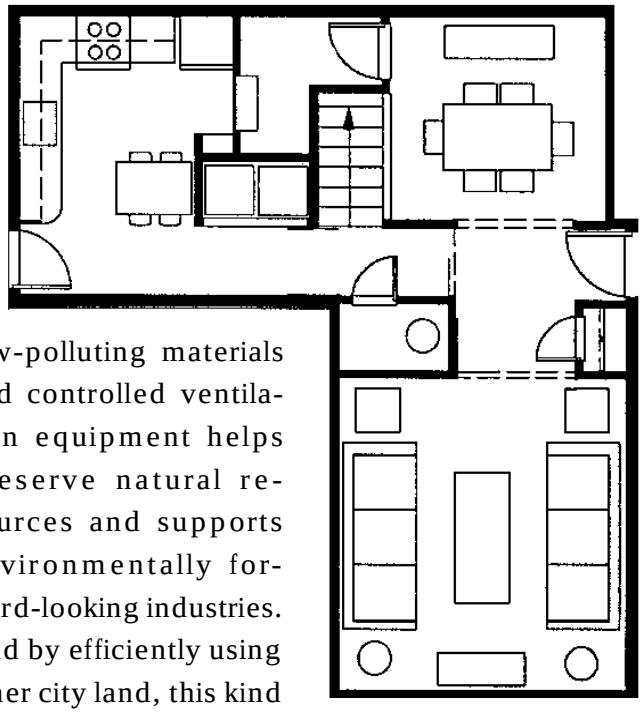
Specifications

- R-28 wall insulation
- R-40 ceiling/roof insulation
- R-19 full coverage insulation on below grade walls
- R-10 sub slab insulation
- High Performance Sun glazing
- HVAC System
  - Space heating and domestic hot water provided by a 34 gallon "Polaris" by American Water Heater rated at 100,00 BTU's with a 94% efficiency rate. Model available for use with Propane gas-it is closed combustion, direct vent
  - All ductwork will be located in the first and second floor framing
  - A 3 ton air handling unit by "First Company"
  - Separate ventilation system with a multi-port ventilator such as Fantech's "Multi-port Ventilator" or DEC, Therma-Stor's "Quiet-Vent"
  - All three bathrooms have crank timer operated switches for occupant control. The kitchen range has a switch for occupant control.



Esperanza del Sol, or "hope of the sun," is a an award-winning community of single family homes on a downtown Dallas infill site. Each of the 12 units is a 1270 square foot, two-story, three bedroom home.

Solar Today states the Esperanza del Sol project "is an excellent example of sustainable building practice because it integrates a number of strategies into one very sensible design solution...Using recycled and low-polluting materials and controlled ventilation equipment helps preserve natural resources and supports environmentally forward-looking industries. And by efficiently using inner city land, this kind of development helps to revitalize a downtown area while reducing traffic, pollution and energy use from commuting." Passive solar features include optimally placing and sizing windows, doors and overhangs to accommodate the southeast orientation. Details such as the stained glass window in the bath, facing the southeast, admit morning sun and provide privacy. Esperanza del Sol homes reduce the health risks from fossil fuel combustion by using tight construction and providing required controlled ventilation. The benefits include increased affordability, more jobs, less environmental impact, reduced energy consumption and improved health.

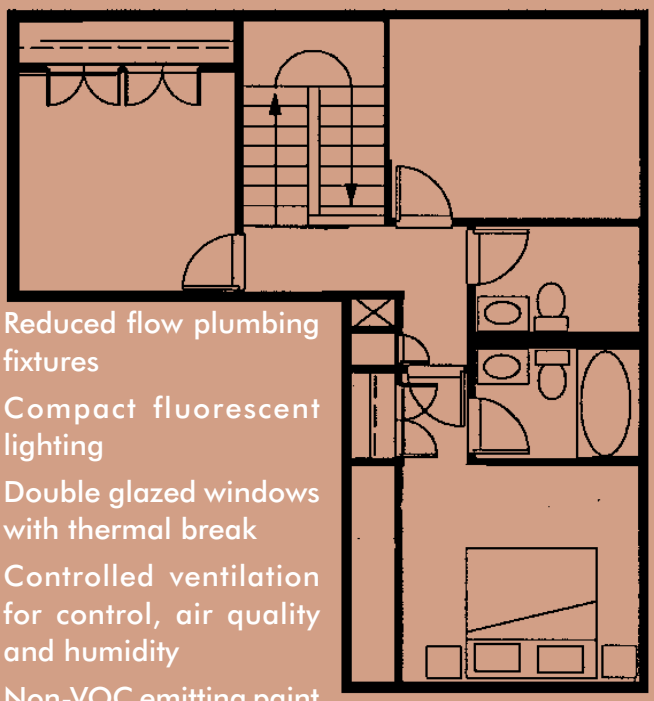


Esperanza del Sol

Dallas, Texas
1994

Specifications

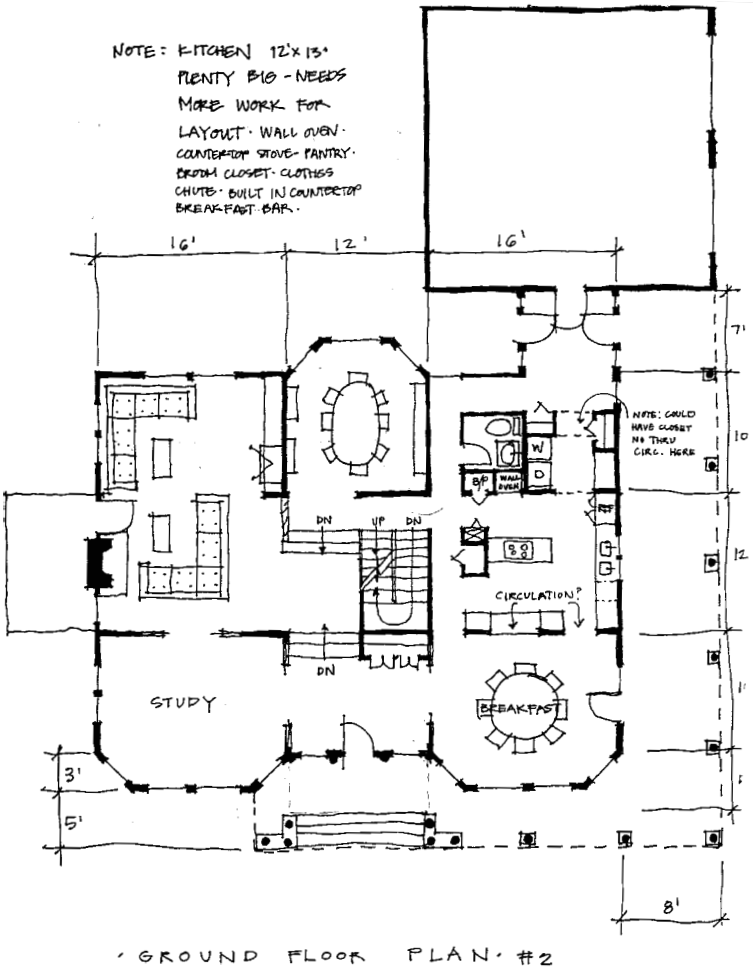
- R-38 blown cellulose attic insulation
- R-25 walls with 5 $^{1}/_{2}$" cellulose, 1" EPS sheathing and O.V.E. framing
- R-5 perimeter slab insulation
- Exterior air retarder system with controlled ventilation



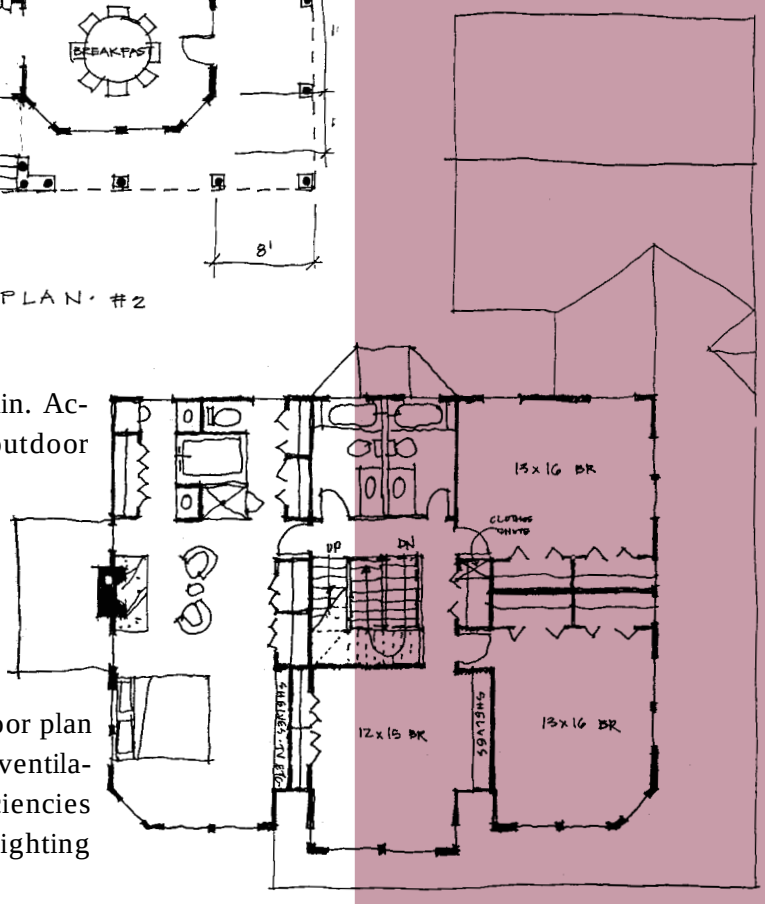
- Reduced flow plumbing fixtures
- Compact fluorescent lighting
- Double glazed windows with thermal break
- Controlled ventilation for control, air quality and humidity
- Non-VOC emitting paint
- Recycling construction waste
- Expanded polystyrene insulation has no CFCs
- Reduce size of HVAC equipment
- Eliminate sheet metal ducts

In the process of building houses, we sometimes encounter conflicting needs among people, buildings and the environment. Trees must be cut down on site to make a home. An architect should understand how to prioritize these needs.

The Shovlin Residence was designed to take advantage of a naturally beautiful sit, while providing for the spacial needs of family living. It maximizes the volume while minimizes surface areas which reduces heat loss and heat gain. Actively used areas, including outdoor use areas are located where they most benefit from daylighting on the south side of the house. Buffer spaces, such as the vestibule, porches and sunspaces, are placed to temper weather extremes. An open floor plan allows for air flow, mechanical ventilation, space conditioning efficiencies and allows for increased daylighting and summer cross ventilation.



'GROUND FLOOR PLAN' #2



'SECOND FLOOR'

Shovlin Residence

Narragansett, Rhode Island
1990

3200 sq. ft. four bedrooms, three and a half bath
$65/sq. ft. construction cost

Specifications

- 2 X 6 exterior walls
- R-19 wall insulation
- R-40 roof insulation
- Full basement with bulkhead
- High performance windows
- High-efficiency (90%) closed combustion furnace provides heat
- Windows are sized and positioned to decrease heat loss during winter, decrease heat gain in summer, while providing daylighting year round and passive solar gain in winter.

Whitehall Farm, a 133-unit residential condominium complex in Middletown, Rhode Island, develops a creative cluster concept to achieve a successful blend of neighborhood and shelter; openness and privacy; standardization and customization in an unusual and highly marketable mix of options.

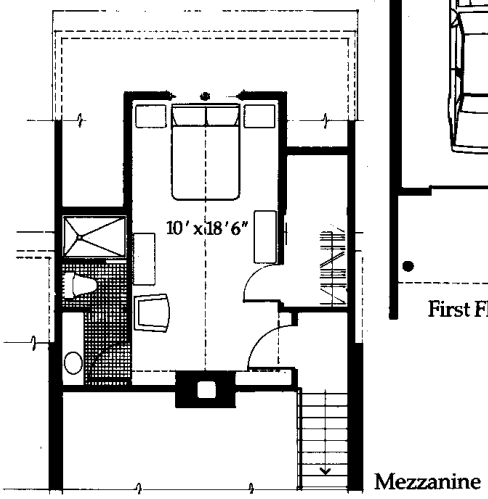
The first cluster development built in its area (a rural community shifting to suburban densities), Whitehall Farms draws its inspiration in planning, design and execution from the colonial New England tradition of its historic site — 64.7 acres of award-winning potato farm originally owned by the 18th century Anglican bishop/philosopher George Berkeley as part of the Whitehall estate near Newport, Rhode Island.

Fostering a traditional spirit of cooperation and communal interchange, the Whitehall "neighborhood" concept offers owners and attractive environment small enough to meet face to face yet integrated to share collective values.

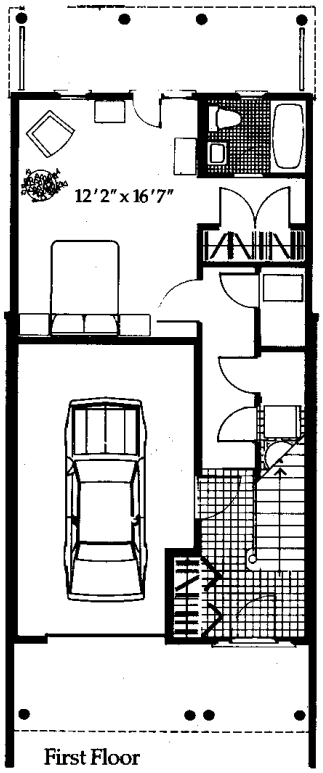
Organized in a hierarchy of groupings, individual units are distributed in a pattern around the site that forms five neighborhoods. Twenty-five to twenty-nine homes in each neighborhood are clustered around a 1.5 acre common to form the primary open space. Two to five individual units are physically attached in groups of 2, 3, 4 and a maximum of five homes. Thirty-six of the 133 units are built as detached homes.

Homes are sited at various angles to the central common to provide visual interest to the complex and to allow formal entries to be visible from the common while shielding automobile access from view. This emphasizes the importance of the individual over the automobile.

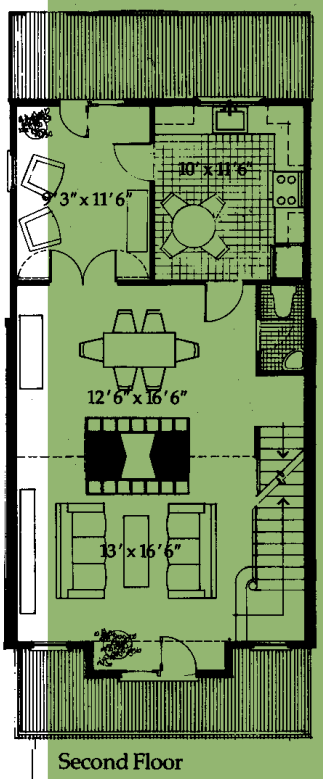
Through its sense of community and security, its ties with the natural landscape and the historic heritage of its site, and its protection of privacy and the desires of individuality, the cluster concept of Whitehall Farms meets market demands yet surpassed competitive developments in its level of planning, design and construction.



Mezzanine



First Floor



Second Floor

Whitehall Farm

Middletown, Rhode Island
1986

Specifications

The plan develops a unique hierarchy of open space that mixes private and public area as follows:

- the 1.5 acre neighborhood common as public space
- front yards as semi-public space
- spaces around and in between homes as semiprivate
- back yards as private areas

Thirteen traditional New England home styles and combinations are constructed from seven basic models arranged in horizontal or vertical schemes with custom assembly of standard parts. This design concept meets the development objective of providing a marketable and aesthetically sensitive design that offers a number of options and is economical to build and affordable to own. (1986 opening price range was $99,900 to $145,000.)

A horizontal design scheme, (single, duplex, triplex or quadriplex) and a vertical alternative (one-, two- or two-and-a-half story) give variety to the layout and combinations, yet provide repetition for efficiency of construction. A "kit" of standard parts, including pitched roofs, windows, sunrooms, French doors, trim, exterior doors and lighting ensure a balance between aesthetics and practicality, individuality and economy. Design items such as expansive porches, outside decks, wood clapboard treatment, fireplaces, tile foyers and cathedral ceilings evoke the gentility and craftsmanship of New England's countryside, and become standard yet affordable amenities that further distinguish the residences at Whitehall Farms.